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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
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09/491,953

01/26/2000

Pascal Mellot

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06/24/2004

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EXAMINER

SHINGLETON, MICHAEL B

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 06/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |  |                                       |           |
|------------------------------|--|---------------------------------------|-----------|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/491,953     | <b>Applicant(s)</b><br>MELLOT, PASCAL |           |
|                              | <b>Examiner</b><br>Michael B. Shingleton | <b>Art Unit</b><br>2817               | <i>Am</i> |

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE Three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 3/15/2004.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 5-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16 is/are allowed.
- 6) ☒ Claim(s) 5, 7-9, 11-13, 15, 17, 18, 20 is/are rejected.
- 7) ☒ Claim(s) 6, 10, 14, 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 7-9, 11-13, 15, 17, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art as represented by Figure 1 (AAPA) in view of Hayt Jr. (Hayt).

AAPA discloses everything recited by the claims including the differential amplifier, a microphone 25 and the bias resistor 10. AAPA fails to mention the use of a signal resistor that is connected between the first and second inputs and to an output of a microphone and the reference voltage, i.e. a resistor connected in parallel with the bias resistor. AAPA is silent of the use of impedance matching at the reference input of the device.

Hayt teaches that a single resistor can be replaced with a parallel combination of resistances. See Figure 2-17. Such structures are art recognized equivalents. Providing impedance matching is conventional so as to reduce reflections and thus provide for efficient power transfer.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the single resistor with a parallel combination of resistors given the art recognized equivalent of the parallel combination of resistors to the single resistor thereby forming a "signal resistor" that current passes wherein the variations of the current corresponding to the signal to be amplified and a bias resistor as meant by the claims. It also would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an impedance matching stage at the reference input so as to reduce reflections of the input signal back into the amplifier as is conventionally known in the art.

Claims 6, 10, 14 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 16 is allowable over the art of record.

Applicant's arguments filed 3-15-2004 have been fully considered but they are not persuasive.

Applicant states: "Nowhere does the prior art of FIG. 1 suggest the signal resistor connected between first and second inputs and to an output of a microphone and the reference voltage, such that the variations of the current correspond to the signal to be amplified." and "there is no teaching or suggestion in the FIG. 1 prior art or in Hayt for any impedance matching or any type of circuit as in the present claimed invention, in which a signal resistor is parallel to the biasing resistor and connected between first and second inputs, the signal resistor being in parallel to the biasing resistor and connected to the output of the microphone and the reference voltage for the differential amplifier." The examiner respectfully disagrees. Note that "to an output of a microphone and the reference voltage" has been added to the claims. The examiner's position is that when the single resistor of AAPA is replaced with a parallel combination of resistors, one of these resistors can be called a "signal resistor". This signal resistor would be connected between the first and second input of the amplifier. This signal resistor would also be connected "to an output of a microphone and the reference voltage" that was added to at least some of the claims. Furthermore, looking at Figure 1 (AAPA) this signal resistor would pass current variations that correspond to the signal to be amplified. Note that the capacitor 17 would pass ac current and voltage. As recognized by applicant the voltage imposes a signal across the first and second input terminals that is proportional to the signal generated by the microphone. This signal being across the resistor 10 or the parallel combination of resistors that is an obvious replacement for element 10 would then cause a current variation in these resistors in accordance with Ohm's Law that is proportional to the signal. Thus, "the variations of the current corresponding to the signal to be amplified" is clearly provided for which applicant has not disagreed with. Also note that one end of the signal resistor would be directly connected to Vref and the other end connected to the microphone via element 17. Note that the term "connected" is a broad term and in fact element 3 of applicant's invention shown in Figure 2 of the instant application is connected to the second input terminal through capacitor 17. Element 3 of applicant's invention shown in Figure 2 is not directly connected to the second input terminal. Thus, the examiner has given the broadest reasonable interpretation to the claim consistent with the specification. See MPEP 904.01:

904.01 Analysis of Claims

The breadth of the claims in the application should always be carefully noted; that is, the examiner should be fully aware of what the claims do not call for, as well as what they do require. During patent examination, the claims are given the broadest reasonable

Art Unit: 2817

interpretation consistent with the specification. See *In re Morris*, 127 F.3d 1048, 44 USPQ2d 1023 (Fed. Cir. 1997). See MPEP § 2111 - § 2116.01 for case law pertinent to claim analysis.

The issue of the impedance matching circuit not being in Hyatt was not the previous rejection or the rejection at hand. Hyatt teaches replacing one resistor with a plurality of parallel connected resistors. They are art recognized equivalent structures. One of ordinary skill in the art additionally would have been motivated to do so because the parallel combination of resistors has the added advantage of dividing the current into many paths and thus a single resistor does not have to handle all the current. The part of the rejection involving the impedance matching circuit is one of Official notice. Impedance matching circuits are well known to be used almost anywhere in a circuit and the reason for doing so is likewise well known and that is to match impedance which prevents reflections and provides for the most efficient transfer to power from one point to another. Applicant has not disagreed with this reasoning.

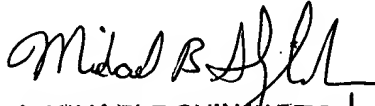
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael B. Shingleton whose telephone number is (571)272-1770. The examiner can normally be reached on Mon-Thurs from 8:30 to 4:30. The examiner can also be reached on alternate Fridays. The examiner normally has first Fridays of the bi-week off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal, can be reached on (571)272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MBS

June 21, 2004

  
MICHAEL B SHINGLETON  
PRIMARY EXAMINER  
GROUP ART UNIT 2817

